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'Make' causatives in English and Mandarin



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Abstract

Make causatives in English involving a DP or CP subject, an experiencer, and an adjective describing the experiencer's psychological state exhibit properties strongly implying that those subjects are derived. The Mandarin equivalents of *make* causatives show similar (although not identical) behavior, indicating that these properties are common to the construction type. In this paper, we present an account of 'make' causatives in both languages in which the DP/CP subjects in question begin as low source arguments that are raised syntactically to the subject position. We show how this proposal explains the relevant properties in both Mandarin and English. We also contrast the behavior of 'make' causatives involving a psych adjective with those involving a non-psych adjective, proposing very different structures that reflect different selections by 'make' in the two cases. In brief, with psych adjectives 'make' is triadic, selecting an experiencer, an AP, and a source phrase in both Mandarin and English. With non-psych adjectives, *make* is dyadic, selecting two clauses in English.

Keywords: 'Make' causatives, Triadic derived-subject constructions, Backward binding, Psych adjectives, Non-psych adjectives

1 Introduction

1.1 Properties of English *make* causatives

Pesetsky (1995) notes that *make* causatives taking a DP subject, an experiencer, and an adjective describing the experiencer's psychological state allow backward binding, as shown in 1a–c (taken from Pesetsky 1995, pp. 43–44).

- (1) a. **Each other**_i +_j's remarks made **John**_i and **Mary**_j angry.
- b. Pictures of **each other**_i made **us**_i happy.
- c. These stories about **herself**_i made **Mary**_i nervous.

This behavior poses a challenge to the well-known *c*-command condition on anaphoric binding (Chomsky 1981, 1986), given that the boldfaced anaphors in 1a–c are not *c*-commanded by their corresponding boldfaced antecedents, i.e., the experiencers.

An additional property of *make* causatives not discussed (to our knowledge) in previous studies is their ability to take a clausal subject along with an experiencer and an adjective describing his/her psychological state (2a). These constructions have expletive variants (2b, d) that also permit backward binding by the experiencer (2c).¹

- (2) a. [_{CP} That Bill had arrived] made John angry.

- b. It made John angry [_{CP} that Bill had arrived].
- c. [_{CP} That **he_i** was criticized by **his_i** teacher] made **no boy_i** angry.
- d. It made **no boy_i** angry [_{CP} that **he_i** was criticized by **his_i** teacher].

Interestingly, this constellation is not found with superficially similar *make* causatives involving a non-experiencer and a non-psych adjective. Compare 3–5, where the post-verbal DP is not an experiencer and the AP does not describe a psychological state.

- (3) a. [_{CP} That he was driving] made John **responsible/culpable** (for the accident).
- b. ***It** made John responsible/culpable (for the accident) [_{CP} that he was driving].
- c. *[That **he_i** was driving] made **no boy_i** responsible/culpable.

- (4) a. [_{CP} That his patient canceled] made John **available/free/accessible**.
- b. ***It** made John available/free/accessible [_{CP} that his patient canceled].
- c. *[That **his_i** patient canceled] made **no doctor_i** available/free/accessible.

- (5) a. [_{CP} That its edge was dull] made **the tool** useful/useless/useable.
- b. ***It** made the tool useful/useless/useable [_{CP} that its edge was dull].
- c. *[That **its_i** edge was dull] made **no tool_i** useful/useless/useable.

Note furthermore that it is the postverbal DP that must denote an experiencer if expletive variants and backward binding are to be enabled. 6a shows a non-experiencer (*working*) with an adjective (*difficult*) that indirectly invokes the experiencer (*us*). Expletive and backward binding variants remain odd in this case (6b–c).

- (6) a. [_{CP} That the temperature was high] made working difficult (for us).
- b. ??**It** made working difficult (for us) [_{CP} that the temperature was high].
- c. ??[That **his_i** teacher was present] made speaking difficult for **no boy_i**.

As elsewhere, occurrence of an expletive *it* subject requires a CP correlate. Thus, although non-expletive DP subjects are possible (7a) and allow backward binding into them (7b), they do not have expletive variants (7c).

- (7) a. [_{DP} That fact] made John angry.
- b. [Pictures of **himself_i**] made **no boy_i** angry.
- c. ***It** made John angry [_{DP} that fact].

Note finally that the possibility of non-expletive DP subjects creates potential ambiguity in *make* causatives with psych adjectives. Thus, 8a has a reading on which *it* is pleonastic and *that Bill had arrived* denotes the source (or cause) of John's state of happiness, identically to 8b.² But 8a has an additional reading on which *it* is referential and the CP is a complement of the psych adjective *happy*, describing the content of

John's happiness-state. Under the latter reading, *it* refers to the source (or cause) and can be replaced by a DP (8c) or a CP (8d).

- (8) a. **It** made John happy **that Bill had arrived**.
 b. [_{CP} That Bill had arrived] made John happy.
 c. [_{DP} That (event)] made John happy [_{CP} that Bill had arrived].
 d. [_{CP} That Mary was drunk] made John happy [_{CP} that Bill had arrived].

1.2 Properties of *shǐ* causatives in Mandarin

Mandarin 使 *shǐ* 'make' causatives both resemble and diverge from English *make* causatives. They permit a clausal subject, an experiencer, and a psych adjective, where the subject is a CP (9a) or a DP (9b). As in English, the subject is construed as the source (or cause) of Zhangsan's anger-state (cf. 2a).³

- (9) a. [_{CP} 瑪麗突然離開]使張三很生氣。
 mǎlì_tūrán_líkāi_shǐ_zhāngsān_hěn_shēngqì
 Mary_suddenly_leave_make_Zhangsan_very_angry
That Mary had suddenly left made Zhangsan very angry.
 b. [_{DP} 這件事]使張三很生氣。
 zhè_jiàn_shì_shǐ_zhāngsān_hěn_shēngqì
 this_CL_matter_make_Zhangsan_very_angry
This matter made Zhangsan very angry.

That Mandarin *shǐ* causatives can take a CP or DP subject is corroborated by corpus data: 10a–d show that *shǐ* causatives with experiencers and psych adjectives can take CP subjects, and 11a–d show that *shǐ* causatives can take DP subjects.⁴

- (10) a. [_{CP} 中國申奧成功]使他非常興奮。(Zhan et al. 詹衛東等 2003)
 zhōngguó_shēn'ào_chénggōng_shǐ_tā_fēicháng_zhènfèn
 China_bid-Olympic_successfully_make_him_very_excited
That China won the Olympic bid made him feel very excited.
 b. [_{CP} 惡耗傳來]使他非常震驚。(Contemporary Chinese Corpus 1998)
 èhào_chuánlái_shǐ_tā_fēicháng_zhènjīng
 terrible-news_come_make_him_very_shocked
That the terrible news came made him feel very shocked.
 c. [_{CP} 國王遜位]使弗朗索瓦絲十分激動。(BLCU Corpus Center 2016)
 guówáng_xùnwèi_shǐ_fúlǎngsuǒwǎsī_shífēn_jīdòng
 king_abdicate_make_François_very_agitated
That the king abdicated made François very agitated.
- (11) a. [_{DP} 席慕蓉的用功]常常使我慚愧。(BLCU Corpus Center 2016)
 xímùróng_de_yònggōng_chángcháng_shǐ_wǒ_cánkui
 Ximurong_DE_diligence_often_make_me_ashamed
Ximurong's diligence often made me feel ashamed.
 b. [_{DP} 中國人民所取得的成就]使敵人害怕。(BLCU Corpus Center 2016)

- zhōngguó_rénmíng_suǒ_qǔdé_de_chéngjiù_shǐ_dírén_hàipà
 Chinese_people_SUO_attain_DE_achievement_make_enemy_scared
The achievements that the Chinese people had attained made the enemy scared.
- c. [DP 清王朝的腐朽]使他失望。(BLCU Corpus Center 2016)
 qīng_wángcháo_de_fǔxiǔ_shǐ_tā_shīwàng
 Qing_dynasty_DE_decadence_make_him_disappointed
The Qing dynasty's decadence made him feel disappointed.

Like English *make* causatives, Mandarin *shǐ* causatives can take a subject, a non-experiencer, and a non-psych adjective, again with either a CP (12) or a DP (13) as subject.

- (12) a. [CP 你抱著我]可以使我暖和一。 (BLCU Corpus Center 2016)
 nǐ_bào_zhe_wǒ_kěyǐ_shǐ_wǒ_nuǎnhuo_yīdiǎn
 you_hold_ASP_I_can_make_I_warm_little
That you hold me can make me feel warmer.
- b. [CP 光線太強太弱]都會使眼睛疲憊。(Zhan et al. 詹衛東等 2003)
 guāngxiàn_tài_qiáng_tài_ruò_dōu_huì_shǐ_yǎnjīng_píbèi
 light_too_strong_too_weak_DOU_will_make_eye_tired
That the light is too strong or too weak will make the eyes tired.
- c. [CP 大臣過於尊顯]會使君主卑微。(BLCU Corpus Center 2016)
 dàchén_guòyú_zūnxiǎn_huì_shǐ_jūnzǔ_bēiwēi
 minister_too_dignified_will_make_monarch_humble
That the ministers were too dignified would make the monarch humble.
- (13) a. [DP 這些事]使她非常繁忙。(BLCU Corpus Center 2016)
 zhè_xiē_shì_shǐ_tā_fēicháng_fánmáng
 this_CL_matter_make_her_extremely_busy
These matters made her extremely busy.
- b. [DP 農村生活]使她的臉頰通紅。(BLCU Corpus Center 2016)
 nóngcūn_shēnghuó_shǐ_tā_de_liánjiá_tōnghóng
 countryside_life_make_she_DE_cheek_red
The rural life made her cheeks red.
- c. [DP 跳動的燈火]使我的眼睛酸痛。(Zhan et al. 詹衛東等 2003)
 tiàodòng_de_dēnghuǒ_shǐ_wǒ_de_yǎnjīng_suāntòng
 sparkling_DE_light_make_I_DE_eye_sore
The sparkling light made my eyes sore.

At the same time, Mandarin *shǐ* causatives differ from English *make* causatives in several respects. For one thing, Mandarin *shǐ* causatives do not exhibit variants with an expletive (14). (We use α to stand for an expletive, as Mandarin does not have a counterpart of English expletive *it* (Cheung and Larson 2015).) In other words, the ill-formedness of (14) should not be attributed to the prohibition against the Mandarin counterpart of English expletive *it*. Rather, it is due to the lack of expletives in Mandarin, which is a general phenomenon.

- (14) * α 使張三很生氣[_{CP} 瑪麗突然離開]。

α _shǐ_zhāngsān_hěn_shēngqì_mǎlì_tūrán_líkāi

EXPL_make_Zhangsan_very_angry_Mary_suddenly_leave

Intended: *It made Zhangsan very angry that Mary had suddenly left*

Also, whereas English *make* causatives allow backward binding only with an experiencer and a psych adjective, Mandarin appears to allow backward binding in all *shǐ* causatives. That is, *shǐ* causatives involving an experiencer and a psych adjective behave no differently than those involving a non-experiencer and a non-psych adjective. As shown in 15a,b, *shǐ* causatives involving an experiencer and a psych adjective allow backward binding of the bare reflexive 自己 *zìjǐ* 'self' by the experiencer. Further, 16a, b shows that *shǐ* causatives involving a non-experiencer and a non-psych adjective also allow backward binding of the bare reflexive *zìjǐ* 'self' by the non-experiencer.⁵ Following the syntactic approach to *zìjǐ*, we assume that *zìjǐ* is a long-distance reflexive subject to Binding Principle A.⁶ On this view, *zìjǐ* in the subject position must be underlyingly c-commanded by the antecedent in the following examples.

- (15) a. 自己_i的裸照被公開使小紅_i很驚訝。

zìjǐ_de_luǒzhào_bèi_gōngkāi_shǐ_xiǎohóng_hěn_jīngyà

self_DE_nude-photo_BEI_make-public_make_Xiaohong_very_shocked

That her_i own nude photos had been made public made Xiaohong_i very shocked.

- b. 能讓自己_i輕鬆一次的念頭使他_i很高興。(BLCU Corpus Center 2016)

néng_ràng_zìjǐ_qīngsōng_yī_cì_de_niàntou_shǐ_tā_hěn_gāoxìng

can_let_self_relaxed_one_CL_DE_idea_make_he_very_happy

The idea of being able to let himself_i relax one time made him_i very happy.

- (16) a. 自己_i也堅持一個星期做幾次面膜來使我_i的肌膚緊繃。(BLCU Corpus Center 2016)

zìjǐ_yě_jiānchí_yī_gè_xīngqí

zuò_jǐ_cì_mìanmó_lái_shǐ_wǒ_de_jīfū_jǐnbēng

self_also_insist-on_one_CL_week_do_several_CL

face-mask_LAI_make_I_DE_skin_firm

That I_i also insisted on using face masks several times a week made my_i skin firm

- b. 自己_i繁忙的業務使張三_i十分疲倦。

zìjǐ_fánmáng_de_yèwù_shǐ_zhāngsān_shífēn_píjuàn

self_busy_DE_affair_make_Zhangsan_very_tired

His_i own busy affairs made Zhangsan_i very tired.

Additional evidence comes from corpus data showing that *shǐ* causatives with an experiencer and a psych adjective allow the experiencer to bind an empty category (*e*) inside a CP subject (17) or a DP subject (18).

- (17) a. [_{CP} **e_i** 背叛他]使我_i很慚愧。(BLCU Corpus Center 2016)

e_bèipàn_tà_shǐ_wǒ_hěn_cánkùì

e_betray_he_make_me_very_ashamed

That [I_i] betrayed him made me_i very ashamed.

- b. [_{CP} **e_i** 有機會接近群眾]使他_i非常高興。(Zhan et al. 詹衛東等 2003)

- e_yǒu_jīhuì_jiējìn_qúnzhòng_shǐ_tā_fēicháng_gāoxìng
 e_have_opportunity_be-close-to_crowd_make_he_extremely_happy
That [he_i] had the opportunity to be close to the crowd made him_i feel extremely happy.
- (18) a. [DP e_i 父親的死]使她_i非常悲痛。(Zhan et al. 詹衛東等 2003)
 e_fùqīn_de_sǐ_shǐ_tā_fēicháng_bēitòng
 e_father_DE_death_make_her_extremely_sad
[Her_i] father's death made her_i feel extremely sad.
- b. [DP e_i 丈夫的理解]使她_i十分感動。(Zhan et al. 詹衛東等 2003)
 e_zhàngū_de_lǐjiě_shǐ_tā_shífēn_gǎndòng
 e_husband_DE_understanding_make_her_moved
[Her_i] husband's understanding made her_i feel moved.

(19) and (20) further show that *shǐ* causatives with a non-experiencer and a non-psych adjective also allow the non-experiencer to bind an empty category (*e*) inside a CP subject (19) or a DP subject (20).

- (19) a. [CP e_i 全心投入工作]使她_i的生活分外忙碌。(Zhan et al. 詹衛東等 2003)
 e_quānxīn_tóurù_gōngzuò_shǐ_tā_de_shēnghuó_fēnwài_mánglù
 e_wholeheartedly_devote_work_make_she_DE_life_especially_busy
That [she_i] devoted herself wholeheartedly to work made her_i life especially busy.
- b. [CP e_i 看到別人對此很習慣]就使我_i更加敏感。(BLCU Corpus Center 2016)
 e_kàndào_bíerén_duì_cǐ_hěn_xíguàn_jiù_shǐ_wǒ_gèngjiǎ_mǐngǎn
 e_see_other_to_this_very_be-used-to_JIU_make_me_more_sensitive
That [I_i] saw other people were very used to it made me_i feel more sensitive.
- (20) a. [DP e_i 一夜的高燒]使她_i的身體十分虛弱。(BLCU Corpus Center 2016)
 e_yīyè_de_gāoshāo_shǐ_tā_de_shēntǐ_shífēn_xūruò
 e_one-night_DE_fever_make_she_DE_body_very_weak
[Her_i] one night's fever made her_i body very weak.
- b. [DP e_i 旅途的勞累]使他_i很疲乏。(BLCU Corpus Center 2016)
 e_lǚtú_de_láolèi_shǐ_tā_hěn_pífá
 e_journey_DE_fatigue_make_he_very_tired
The fatiguing nature of [his_i] journey made him_i very tired.

We propose that the empty category in these examples is *pro*, in the sense of Huang (1984, 1989, 1992). Specifically, Huang proposes that Mandarin crucially differs from English in possessing an empty pronoun *pro*, which can appear in all argument positions including possessive ones (see Huang et al. 2009). According to Huang (1984), the distribution of *pro* is governed by the Generalized Control Rule (taken from Huang 1984, p. 552).

(21) Generalized control rule

Coindex an empty pronominal with the closest nominal element.

Huang defines *closest* in terms of *c-command*: a nominal element is considered closest to *pro* if it is the closest nominal element *c-commanding* *pro*. Assume that the empty category in the above examples should be analyzed as *pro*. On this view, the *pro*

inside the CP and DP subjects must be underlyingly c-commanded by the experiencer in *shǐ* causatives with psych adjectives (17–18) and by the non-experiencer in *shǐ* causatives with non-psych adjectives (19–20).

Finally, Mandarin *shǐ* causatives do not allow a CP or DP subject to co-occur with the CP complement of a psych adjective, where the latter describes the content of the AP-state. Compare English 8c–d (repeated as 22a–b) with Mandarin 23a–b.

- (22) a. [_{DP} That (event)] made John happy [_{CP} that Bill had arrived].
 b. [_{CP} That Mary was drunk] made John happy [_{CP} that Bill had arrived].

- (23) a. *_{[DP 這件事]使張三很生氣}_[CP 瑪麗突然離開]。
 zhè_jiàn_shì_shǐ_zhāngsān_hěn_shēngqì_mǎlì_túrán_líkāi
 this_CL_matter_make_Zhangsan_very_angry_Mary_suddenly_leave
 Intended: *This matter made Zhangsan very angry that Mary had suddenly left*
 b. *_{[CP 李四喝醉了]使張三很生氣}_[CP 瑪麗突然離開]。
 lǐsì_hēzuì_le_shǐ_zhāngsān_hěn_shēngqì_mǎlì_túrán_líkāi
 Lisi_drunk ASP_make_Zhangsan_very_angry_Mary_suddenly_leave
 Intended: *That Lisi was drunk made Zhangsan very angry that Mary had suddenly left.*

The table in (24) summarizes the properties of English and Mandarin 'make' causatives.

(24) Properties of English and Mandarin “make” causatives

	English <i>make</i> causatives	Mandarin <i>shǐ</i> causatives
Subject	<i>it</i> /DP/CP	* <i>it</i> ; DP/CP
Backward binding	Only with psych adjectives	Always possible

In sum, 'make' causatives in English and Mandarin share two important properties: first, they can both take a DP or a CP as their subject; second, they both permit backward binding with psych adjectives. However, unlike English *make* causatives, Mandarin *shǐ* causatives lack expletive variants. *Shǐ* causatives also seem to enjoy greater freedom in terms of backward binding, as we have seen that backward binding is also permitted with non-psych adjectives.

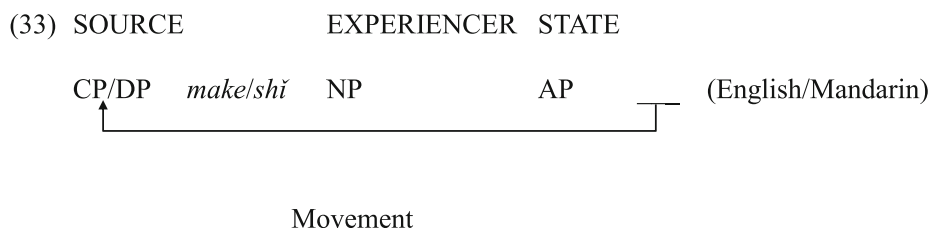
2 Projecting 'make' causatives

In light of the two important properties shared by English and Mandarin 'make' causatives, we propose that in both languages, 'make' causatives involving experiencers and psych adjectives are essentially triadic unaccusatives. On this view, 'make' causatives like 25a have the underlying structure shown in 25b. Specifically, assume that the vP in (25b) is the usual one occurring with unaccusatives like *John arrived* (25c). We then posit that 'make' causatives have an additional empty verb (V in 25b), which is a true light verb responsible for assigning the experiencer θ -role to *John* when *make* raises (Grimshaw and Mester 1988). The empty verb V in turn subcategorizes for a VP structure like the VP-shell structure proposed in Larson (1988) whose head is occupied by *make*; its specifier is an AP denoting a psychological state; and its complement can be a CP or a DP denoting the source.

3 Predicting the data

3.1 Shared predictions for English and Mandarin 'make' causatives

Two important predictions follow from our analysis of 'make' causatives in English and Mandarin. First, given that the experiencer c-commands the source CP or DP underlyingly before it moves to the subject position (33), our proposal correctly predicts that backward binding is possible in both languages, assuming that binding can be established derivationally or through silent copies.⁷



The fact that 'make' causatives allow backward binding is further corroborated by 35a–c and their expletive variants 34a–c. Since the experiencer c-commands the source CP in 34a–c, it can serve as the antecedent of the anaphor inside the CP. And since our proposal maintains that the source CP is underlyingly c-commanded by the experiencer and that the surface order in 35a–c is derived by raising the source CP to the subject position (see 33), we correctly predict that these examples permit backward binding.

- (34) a. It made **no boy**_i happy [_{CP} that **he**_i was criticized].
 b. It made **each boy**_i envious [_{CP} that **the other**_i was praised].
 c. It made **John**_i angry [_{CP} that pictures of **himself**_i appeared on YouTube].

- (35) a. [_{CP} That **he**_i was criticized] made **no boy**_i happy ____.
 b. [_{CP} That **the other**_i was praised] made **each boy**_i envious ____.
 c. [_{CP} That pictures of **himself**_i appeared on YouTube] made **John**_i angry ____.

Our proposal also accounts for the backward binding observed in *make* causatives with a DP subject (see 1a–c and 7b, repeated in 36). Since our proposal maintains that the source DP is underlyingly c-commanded by the experiencer (see 33) and that the surface order in 36a–d is derived by moving the DP to the subject position, we correctly predict that these examples permit backward binding.

- (36) a. [_{DP} **Each other**_{i+j}'s remarks] made **John**_i and **Mary**_j angry ____.
 b. [_{DP} Pictures of **each other**_i] made **us**_i happy ____.
 c. [_{DP} These stories about **herself**_i] made **Mary**_i nervous ____.
 d. [_{DP} Pictures of **himself**_i] made **no boy**_i angry ____.

Second, our analysis of *make* causatives correctly predicts that backward binding is not permitted between an anaphor in a source CP and a quantifier or proper name inside the CP complement of a psych adjective. For example, neither the quantifier *no boy* (37a), the quantifier *each boy* (37b), nor the proper name *Mary* (37c) inside the CP

complement of the psych adjective *happy* can serve as the antecedent of the anaphor within the source CP. This failure of backward binding follows from our analysis, since the CP complement of psych adjectives does not c-command the source CP.

- (37) a. *_[CP That **he**_i was praised] made John happy _[CP that **no boy**_i was present] ____.
 b. *_[CP That **the other**_i was praised] made John happy _[CP that **each boy**_i was away] ____.
 c. *_[CP That pictures of **herself**_i appeared on YouTube] made John happy
 _[CP that **Mary**_i was out of town] ____.

Turning to Mandarin, since our analysis holds that the source CP (15a, repeated as 38a) and DP (15b, repeated as 38b) are underlyingly c-commanded by the experiencer before they move to the subject position (see 33), we correctly predict that backward binding is permitted.

- (38) a. _[CP 自己_i的裸照被公開]使小紅_i很驚訝 ____。
 zìjǐ_de_luǒzhào_bèi_gōngkāi_shǐ_xiǎohóng_hěn_jīngyà
 self_DE_nude-photo_BEI_make-public_make_Xiaohong_very_shocked
 That her_i nude photos had been made public made Xiaohong_i very shocked.
 b. _[DP 能讓自己_i輕鬆一次的念頭]使他_i很高興 ____。(BLCU Corpus Center 2016)
 néng_ràng_zìjǐ_qīngsōng_yī_cì_de_niàntou_shǐ_tā_hěn_gāoxìng
 can_let_self_relaxed_one_CL_DE_idea_make_he_very_happy
 The idea of being able to let himself_i relax one time made him_i very happy.

Recall that *shǐ* causatives allow the experiencer to bind *pro* inside a CP subject (17, repeated as 39) or a DP subject (18, repeated as 40).

- (39) a. _[CP **pro**_i 背叛他]使我_i很慚愧。(BLCU Corpus Center 2016)
 pro_bèipàn_tà_shǐ_wǒ_hěn_cánkùi
 pro_betray_him_make_me_very_ashamed
 That [I_i] betrayed him made me_i very ashamed.
 b. _[CP **pro**_i 有機會接近群眾]使他_i非常高興。(Zhan et al. 詹衛東等 2003)
 pro_yǒu_jīhuì_jiējìn_qúnzhòng_shǐ_tā_fēicháng_gāoxìng
 pro_have_opportunity_be-close-to_crowd_make_he_extremely_happy
 That [he_i] had the opportunity to be close to the crowd made him_i feel extremely happy.
- (40) a. _[DP **pro**_i 父親的死]使她_i非常悲痛。(Zhan et al. 詹衛東等 2003)
 pro_fùqīn_de_sǐ_shǐ_tā_fēicháng_bēitòng
 pro_father_DE_death_make_her_extremely_sad
 [Her_i] father's death made her_i feel extremely sad.
 b. _[DP **pro**_i 丈夫的理解]使她_i十分感動。(Zhan et al. 詹衛東等 2003)
 pro_zhàngfū_de_lǐjiě_shǐ_tā_shífēn_gǎndòng
 pro_husband_DE_understanding_make_her_very_moved
 [Her_i] husband's understanding made her_i feel very moved.

Under our proposal that a source CP or DP is underlyingly c-commanded by the experiencer in *shǐ* causatives, and given that there is no other nominal element c-commanding

pro, as 41b and 42b show, we correctly predict that *pro* inside the source CP or DP will be coindexed with the experiencer, following Huang's (1984) generalized control rule.

- (41) a. [_{CP} *pro*_i 背叛他]使我_i很惭愧。 (BLCU Corpus Center)

pro __bèipàn__tà__shǐ__wǒ__hěn__cánkùi
 pro__betray__him__make__me__very__ashamed
That [I_i] betrayed him made me_i very ashamed.

- b. EXPERIENCER STATE SOURCE
 ...[_v'使 ...[_{VP} 我_i ... [_{VP} 很惭愧 ... [_{CP} *pro*_i 背叛他]]]
 shǐ__wǒ__hěn__cánkùi__**pro**__bèipàn__tà
 make__me__very__ashamed__pro__betray__him
That [I_i] betrayed him made me_i very ashamed.

- (42) a. [_{DP} *pro*_i 父親的死]使她_i非常悲痛。 (Zhan et al. 2003)

pro __fùqīn__de__sǐ__shǐ__tā__fēicháng__bēitòng
 pro__father__DE__death__make__her__extremely__sad
[Her_i] father's death made her_i extremely sad.

- b. EXPERIENCER STATE SOURCE
 ...[_v'使 ...[_{VP} 她_i ... [_{VP} 非常悲痛 ... [_{DP} *pro*_i 父親的死]]]
 shǐ__tā__fēicháng__bēitòng__**pro**__fùqīn__de__sǐ
 make__her__extremely__sad__pro__father__DE__death
[Her_i] father's death made her_i extremely sad.

In sum, our analysis of 'make' causatives in English and Mandarin correctly predicts that backward binding is permitted in both languages.

3.2 Divergences between English and Mandarin 'make' causatives

As summarized in the table in 24, 'make' causatives in English and Mandarin exhibit three crucial differences, which we analyze below.

3.2.1 Availability of expletive variants

Unlike English *make* causatives, Mandarin *shǐ* causatives lack expletive variants; compare 43 and 14 (repeated as 44).

(43) It made David very angry that Mary had suddenly left.

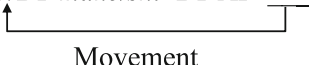
(44) * α 使張三很生氣[_{CP} 瑪麗突然離開]。

α _shǐ_zhāngsān_hěn_shēngqì_mǎlì_túrán_líkāi

EXPL_make_Zhangsan_very_angry_Mary_suddenly_leave

Intended: *It made Zhangsan very angry that Mary had suddenly left.*

We assimilate this to a wider fact about Mandarin—that is, Mandarin lacks expletive structures.⁸ Assuming that 'make' is associated with a strong EPP feature in both English and Mandarin, we correctly predict that the strong EPP feature can be checked by movement of the source CP or DP to the subject position in both English and Mandarin (45a) or by insertion of the expletive *it* in the subject position in English (45b).⁹ Since Mandarin lacks expletive structures, we correctly predict the absence of Mandarin counterparts of (45b), where the source CP remains in situ when an expletive is inserted.¹⁰

- (45) a. CP/DP *make/shǐ* DP AP _____ (English/Mandarin)

 Movement
- b. *It make* DP AP CP (English only)

3.2.2 Mandarin *shǐ* causatives with non-psych adjectives

Unlike English *make* causatives, which disallow backward binding with non-experiencers and non-psych adjectives, all Mandarin *shǐ* causatives—including those with non-experiencers and non-psych adjectives—permit backward binding (see 16, repeated in 46). As in *shǐ* causatives with experiencers and psych adjectives, backward binding is permitted with a DP subject (46a) or a CP subject (46b).

(46) a. [_{DP} 自己_i 繁忙的業務] 使張三_i 十分疲倦。

zìjǐ_fánmáng_de_yèwù_shǐ_zhāngsān_shífēn_píjuàn

self_busy_DE_affair_make_Zhangsan_very_tired

His_i own busy affairs made Zhangsan_i very tired.

b. 自己_i也堅持一個星期做幾次面膜來使我_i的肌膚緊繃。(BLCU Corpus Center 2016)

zìjǐ_yě_jiānchí_yī_gè_xīngqī_zuò_jǐ_cì_mìànmó_lái_shǐ_wǒ_de

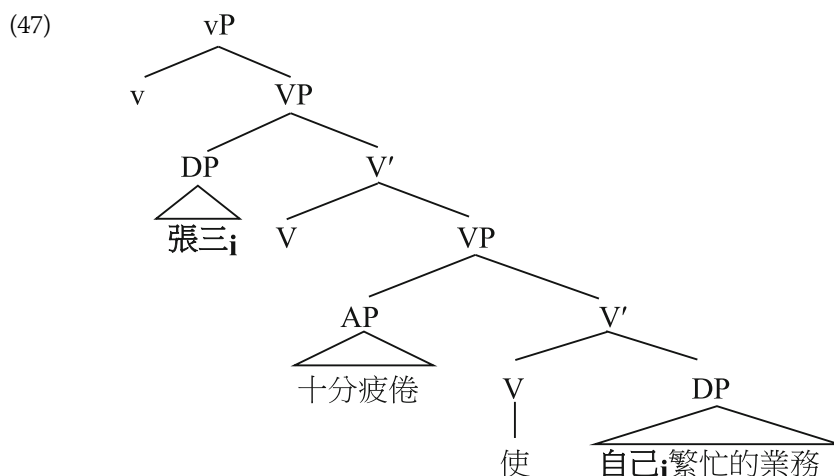
jīfū_jǐnbēng

self_also_insist-on_one_CL_week_do_several_CL_face-mask_LAI

make_I_DE_skin_firm

That I_i also insisted on using face masks several times a week made my_i skin firm.

To account for these data, we propose a variant of our original triadic structure in which V is a true light verb, which does *not* assign an experiencer θ -role, as in 47 for 46a. Since the bare reflexive 自己 *zìjǐ* 'self' inside the DP complement of V is underlyingly c-commanded by the non-experiencer 張三 *zhāngsān* 'Zhangsan', we correctly predict that backward binding is permitted.



To derive the surface order, we propose that 使 *shǐ* 'make' raises through V to v and then to I, and the DP raises to Spec-vP and then to Spec-IP.

- (48) [IP [DP 自己繁忙的業務] [I' 使 [vP [v' [VP 張三 [v' [VP 十分疲倦 [v']]]]]]]]]]
 zìjǐ fánmáng de yèwù shǐ zhāngsān shífēn píjuàn
 self_busy_DE affairs_make Zhangsan_very_tired
His_i busy affairs made Zhangsan_i very tired.

Additional evidence comes from corpus data showing that in *shǐ* causatives, the non-experiencer can bind *pro* inside the CP subject (19, repeated as 49) and DP subject (20, repeated as 50).

- (49) a. [CP **pro_i** 全心投入工作]使她_i的生活分外忙碌。(Zhan et al. 詹衛東等 2003)
pro quānxīn_tóurù_gōngzuò shǐ tā_de shēnghuó_fènwài_mánglù
 pro_wholeheartedly_devote_work_make_she_DE_life_especially_busy
That [she_i] devoted herself wholeheartedly to work made her_i life especially busy.
- b. [CP **pro_i** 看到別人對此很習慣]就使我_i更加敏感。(BLCU Corpus Center 2016)
pro kàndào_bíerén_duì_cǐ_hěn_xíguàn_jiù shǐ wǒ_gèngjiǎ_mǐngǎn
 pro_see_other_to_this_very_be-used-to_JIU_make_me_more_sensitive
That [I_i] saw other people were very used to it made me_i feel more sensitive.
- (50) a. [DP **pro_i** 一夜的高燒]使她_i的身體十分虛弱。(BLCU Corpus Center 2016)
pro yīyè_de_gāoshāo shǐ tā_de shēntǐ_shífēn_xūruò
 pro_one-night_DE_fever_make_she_DE_body_very_weak
[Her_i] one night's fever made her_i body very weak.
- b. [DP **pro_i** 旅途的勞累]使他_i很疲乏。(BLCU Corpus Center 2016)
pro lǚtú_de_láolèi shǐ tā_hěn_pífá
 pro_journey_DE_fatigue_make_he_very_tired
The fatiguing nature of [his_i] journey made him_i very tired.

Under our proposal that the CP and DP subjects are underlyingly c-commanded by the non-experiencer in *shǐ* causatives, and given that there is no other nominal element c-commanding *pro* (see 51a for 49a and 51b for 50a), we correctly predict that *pro* inside the CP and DP subject is coindexed with the non-experiencer, following Huang's generalized control rule.

- (51) a. ...[_V 使 ...[_{VP} 她_i的生活 ...[_{VP} 分外忙碌 ...[_{CP} *pro*_i 全心投入工作]]]]
 shǐ **tā** de shēnghuó fènwài mánglù **pro** quānxīn tóurù gōngzuò
 make she DE life especially busy pro wholeheartedly devote work
That [she_i] devoted herself wholeheartedly to work made her_i life especially busy.
- b. ...[_V 使 ...[_{VP} 她_i的身體 ...[_{VP} 十分虛弱 ... [DP *pro*_i 一夜的高燒]]]]
 shǐ **tā** de shēntǐ shífēn xūruò **pro** yīyè de gāoshāo
 make she DE body very weak pro one-night DE fever
[Her_i] one night's fever made her_i body very weak.

In sum, our proposal that *shǐ* causatives have a unified triadic structure nicely accommodates the fact that backward binding is permitted with both psych and non-psych adjectives in Mandarin.

3.2.3 English *make* causatives with non-psych adjectives

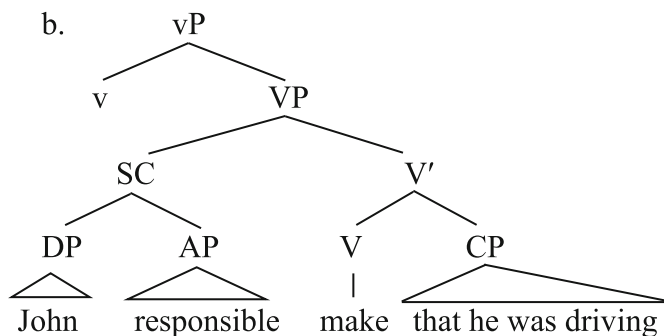
Recall that English *make* causatives with non-experiencers and non-psych adjectives crucially differ from their Mandarin counterparts in terms of backward binding: namely, they disallow it (see 3–6, repeated as 52–55).

- (52) a. [_{CP} That he was driving] made John responsible/culpable (for the accident).
 b. *It made John responsible/culpable (for the accident) [_{CP} that he was driving].
 c. *[That **he_i** was driving] made **no boy_i** responsible/culpable.
- (53) a. [_{CP} That his patient canceled] made John available/free/accessible.
 b. *It made John available/free/accessible [_{CP} that his patient canceled].
 c. *[That **his_i** patient canceled] made **no doctor_i** available/free/accessible.
- (54) a. [_{CP} That its edge was dull] made the tool useful/useless/useable.
 b. *It made the tool useful/useless/useable [_{CP} that its edge was dull].
 c. *[That **its_i** edge was dull] made **no tool_i** useful/useless/useable.
- (55) a. [_{CP} That the temperature was high] made working difficult (for us).
 b. ??It made working difficult (for us) [_{CP} that the temperature was high].
 c. ??[That **his_i** teacher was present] made speaking difficult for **no boy_i**.

To capture this fact, we tentatively suggest a small clause (SC) structure, according to which *make* causatives with non-experiencers and non-psych adjectives do *not* have a triadic structure (see 56b for 56a). Furthermore, given the absence of an additional empty V responsible for assignment of the experiencer θ -role, and

given that the SC has a subject (here, *John*), no experiencer θ -role is expected to be assigned. As *make* relates clause-like arguments (the SC and the CP complement), it is essentially synonymous with *cause* in English.

(56) a. [_{CP} That he was driving] made John responsible.



Given that the DP subject and the non-psych adjective are not subcategorized arguments of *make*, our proposed structure predicts that there are no direct thematic relations between *make*, the DP subject, and the non-psych adjective within the SC. In addition, our proposed structure correctly predicts that no backward binding is possible between the DP subject within the SC and a personal pronoun within the CP complement of *make* (e.g., *he* in 52c), since no c-command relations hold between the two.¹¹

To derive the surface order, we propose that *make* raises to *v* and then to *I*, and the CP raises to Spec-vP and then to Spec-IP.

(57) [_{IP} [_{CP} that he was driving] [_{I'} made [_{VP} [_{v'} [_{VP} [_{SC} [_{DP} John] [_{AP} responsible]]] [_{v'}]]]]]]

While the fact that *make* causatives with non-experiencers and non-psych adjectives lack expletive variants (see the b examples in 52–55) does not directly follow from our proposed structure, it seems plausible to relate this to the synonymous status of *make* and *cause*, as both disallow an expletive subject (58b, 59b) and both can take a clausal subject (58a, 59a).

(58) a. [_{CP} That he was driving] made John responsible/culpable (for the accident).
 b. *It made John responsible/culpable (for the accident) [_{CP} that he was driving].

(59) a. [_{CP} That he was driving] caused John to be held responsible.
 b. ?*It caused John to be held responsible [_{CP} that he was driving].

4 Conclusion

In this paper, we examined 'make' causative constructions with DP, AP, and CP arguments in two typologically unrelated languages: English and Mandarin. *Make* causatives in English involving a DP or CP subject, an experiencer, and an adjective describing the

experiencer's psychological state exhibit properties strongly implying that their subjects are derived. Their Mandarin counterparts pattern quite similarly, suggesting that the relevant properties are common to the construction type. We presented an account of 'make' causatives in both languages in which the DP/CP subjects in question originate as low source arguments that raise syntactically to the subject position. We showed that this proposal explains the relevant properties in both Mandarin and English: specifically, the possibility of backward binding in both languages and the availability of subject expletives in English. We further contrasted the behavior of 'make' causatives involving psych adjectives with those involving non-psych adjectives, proposing a different analysis for the latter case that assumes a different selection pattern for 'make'. With psych adjectives 'make' is triadic, selecting an experiencer, an AP, and a source phrase in both Mandarin and English. The source phrase expresses the source of the state induced in the experiencer. By contrast, with non-psych adjectives *make* is dyadic, selecting two clauses in English. *Make* expresses a causation relation between the eventualities denoted by the two clauses.

5 Endnotes

¹Note that *make* causatives with a clausal subject, an experiencer, and a psych adjective resemble Experiencer Object psych verbs in permitting a clausal subject (ia), expletive variants (ib,d), and backward binding (ic). Whether Experiencer Object psych verbs are derivationally related to psychological *make* causatives is a question we leave open for future study. For previous analyses of Experiencer Object psych verbs, see Pesetsky (1987, 1995), Belletti and Rizzi (1988), Landau (2010), and Cheung and Larson (2015).

- (i) a. [_{CP} That Bill had arrived] angered John.
- b. It angered John [_{CP} that Bill had arrived].
- c. [_{CP} That **he**_i was criticized by **his**_i teacher] angered **no boy**_i.
- d. It angered **no boy**_i [_{CP} that **he**_i was criticized by **his**_i teacher].

²We follow our earlier proposal (Cheung and Larson 2015) that the CP and DP subjects bear a source role, understood in 8b–d as a cause. Specifically, we observe that English speakers often actually use the words *source* and *from* in talking about the causes of the psychological states described by psych adjectives (examples taken from Cheung and Larson 2015: 169).

- (i) John: I am feeling very angry.
- Analyst: I see. Where is this anger coming **from**? Can you identify the **source** of your feelings?

Also, source arguments in *make* causatives with psych adjectives (iia) can freely alternate with explicit causative forms (*because*) (iib), suggesting that the two are closely connected.

- (ii) a. That Bill had arrived made John angry.
- b. John was/felt/became angry **because** Bill had arrived.

Following our work, we consider what are sometimes informally described as “causer” subjects in *make* causatives with psych adjectives to in fact be sources. It is simply that, in the context of these particular predicates, *source* refers to the point of origin for the psychological state described by the psych adjective—its cause.

³The abbreviations used in this paper are as follows: ASP = aspect marker, CL = classifier, e = empty category, EXPL = expletive, RE = resumptive element, and SC = small clause.

⁴A reviewer claims that only a CP, not a DP, can serve as a topic in *shǐ* causatives with experiencers and psych adjectives; according to the reviewer, this is evidenced by the fact that a CP can be followed by a pause, indicated here by a comma. The reviewer further claims that a CP in a *shǐ* causative with an experiencer and a psych adjective can only occupy the topic position, contrary to its counterpart in English, which can occupy the subject position. Nevertheless, we find that neither claim is supported by the corpus data. As the data show, either a CP or a DP can serve as a left-dislocated topic and can be followed by a pause in both English and Mandarin, indicating that both languages allow both a CP and a DP to serve as a topic in ‘make’ causatives with experiencers and psych adjectives. In the following examples, the left-dislocated CP (ia, iia) and DP (ib, iib) are coindexed with a resumptive element—that is, a resumptive demonstrative in ia and iia, and a resumptive pronoun in ib. and iib.

- (i) a. [_{CP} That Bill had arrived]_i, that_i made John angry.
 b. [_{DP} This matter]_i, it_i made John angry.
- (ii) a. [_{CP} 那德國人不再睬他了]_i,這_i使他很生氣。(BLCU Corpus Center 2016)
 nà_déguórén_bùzài_cǎi_tā_le,_zhè_shǐ_tā_hěn_shēngqì
 that_German_no-longer_
 pay-attention-to_him_ASP_this_make_him_very_angry
That the German no longer paid attention to him_i, that_i made him very angry.
- b. [_{DP} 一個家庭]_i,它_i使你厭煩。(BLCU Corpus Center 2016)
 yī_gè_jiāting,_tā_shǐ_nǐ_yànfán
 one_CL_family_it_make_you_weary
A family_i, it_i makes you weary.

Given that Mandarin, but not English, is a pro-drop language, we expect that the CP and DP topics can be coindexed with a covert counterpart of the resumptive element, as shown in the following corpus data:

- (iii) a. [_{CP} 總理這次來我家吃飯]_i,RE_i使先父十分高興。(Zhan et al. 詹衛東等 2003)
 zǒnglǐ_zhè_cì_lái_wǒ_jiā_chīfàn,_RE_shǐ_xiānfù_shífēn_gāoxìng
 premier_this_CL_come_I_home_eat_RE_make_father_very_happy
That the premier came to my home for dinner this time_i, [that_i] made my father very happy.
- b. [_{DP} 這幾個數字]_i,RE_i使縣領導十分驚訝。(BLCU Corpus Center 2016)
 zhè_jǐgè_shùzì,_RE_shǐ_xiàn_lǐngdǎo_shífēn_jīngyà
 this_CL_figure_RE_make_county_leader_very_surprised
These figures_i, [they_i] make the county leader very surprised.

The reviewer's claim—that a CP can never serve as the subject in *shǐ* causatives with experiencers and psych adjectives in Mandarin—is also not supported by the corpus data in 10a–c, as we can see that the CP is not followed by a pause. Note that our view that a CP can serve as a subject and a topic is in line with many previous studies on Mandarin, which advocate that both subject and topic exist in the language as separate grammatical notions (Li and Thompson 1976, 1981; Tsao 1979, 1990; Huang 1982; Li 1990; Ning 1993; Qu 1994; Shyu 1995; Shi 2000) even though Mandarin is well known as being a topic-prominent language.

⁵A reviewer claims that backward binding is allowed in *shǐ* causatives with the bare reflexive 自己 *zìjǐ* 'self' but it is impossible with compound reflexives such as 他自己 *tāzìjǐ* 'himself'. We acknowledge that *shǐ* causatives showing backward binding with bare reflexives and compound reflexives are rare in the corpora, since a bare reflexive and a compound reflexive can be replaced by an empty category coindexed with the antecedent (see 17–20). Nonetheless, *shǐ* causatives showing backward binding with compound reflexives can be found (see i), indicating that backward binding of a compound reflexive by an experiencer is possible.

- (i) 他自己_i所弄的錯誤使他_i懊惱。(BLCU Corpus Center 2016)
 tā_zìjǐ_suǒ_nòng_de_cuòwù_shǐ_tā_àonǎo
 he_self_SUO_make_DE_mistake_make_he_annoied
His_i own mistakes make him_i annoyed.

⁶There are various analyses under the syntactic approach to 自己 *zìjǐ* 'self'. For more detailed discussion, see Tang (1989), Huang and Jane Tang (1991), among others.

⁷There are basically two approaches to the binding principles. The *derivational approach* assumes that the conditions of the binding principles can be met at different derivational stages (Belletti and Rizzi 1988). Under this approach, the conditions for anaphor binding are met *before* (but not after) the source CP or DP raises to the subject position. Hence, the experiencer can c-command the source CP. The *representational approach* takes the binding principles to hold at a single level (LF) but allows reference to prior derivational stages in the form of copies of moved items or pre-movement sites that are targets for reconstruction. On this view, the source CP or DP could make reference to prior derivational stages in the form of copies or take its underlying position as a target for reconstruction, thus allowing the experiencer to c-command it at LF. Here, we assume that both approaches can account for the backward binding observed in psychological 'make' causatives in English and Mandarin. For discussion of the derivational approach to binding in the sense of Belletti and Rizzi (1988), see Abe (1993), Kitahara (1997), Epstein et al. (1998), Grewendorf and Sabel (1999), Lasnik (1999), Kayne (2002), Zwart (2002), Epstein and Daniel Seely (2002, 2006), Saito (2003, 2005), and Bailyn (2007), among others. For discussion of the representational approach to binding, see Lebeaux (1983), Pica (1991), Hestvik (1992), Cole and Sung (1994), Baltin (2003), and Fox and Nissenbaum (2004), among others.

⁸The unavailability of expletive variants is also observed in Mandarin Experiencer Object psych verb constructions, as discussed in our earlier work (Cheung and Larson 2015). As we note, while English Experiencer Object psych verb

constructions with clausal arguments allow expletive variants (ia), their Mandarin counterparts do not (ib). Furthermore, in the Mandarin construction, the clausal argument must appear in the subject position (ic) (ia–c are taken from Cheung and Larson 2015: 173).

- (i) a. It infuriated Lisi [_{CP} that Mary suddenly left].
 b. * α 激怒了李四 [_{CP} 瑪麗突然離開]。
 α _jìnù _le _lǐsì _mǎlì _túrán _líkāi
 EXPL _infuriate _ASP _Lisi _Mary _suddenly _leave
 Intended: *It infuriated Lisi that Mary suddenly left.*
 c. [_{CP} 瑪麗突然離開] 激怒了李四。
 mǎlì _túrán _líkāi _jìnù _le _lǐsì
 Mary _suddenly _leave _infuriate _ASP _Lisi
That Mary suddenly left infuriated Lisi.

If these observations are correct, they further corroborate our proposal that Mandarin—unlike English—lacks expletive structures.

⁹One might wonder whether the movement of the source CP in Mandarin might have to do with case, as some authors such as Li (1985, 1990) and Tsai (1994) have suggested that Mandarin CPs resemble Mandarin (and English) DPs in *always* requiring case-checking. If these authors are correct, we expect that Mandarin CPs and DPs both need to raise to the subject position in order to receive case (45a). Only English CPs are able to remain in situ when *it* is inserted (45b), because only English CPs do not require Case-checking. Evidence against this view comes from the fact that Mandarin CPs may appear in non-case-marked positions. For instance, it is well known that adjectives do not assign Case (Huang et al. 2009). If Mandarin CPs, unlike English ones, must always be assigned Case, we expect that a Mandarin CP cannot appear as the complement of a psych adjective while an English one can, contrary to fact.

- (i) a. 我很傷心 [_{CP} 他現在要受人輕視]。(Zhan et al. 詹衛東等 2003)
 wǒ _hěn _shāngxīn _tā _xiànzài _yào _shòu _rén _qīngshì
 I _very _sad _he _now _need _SHOU _people _underestimate
I am sad that he is being despised now.
 b. 大家都氣憤 [_{CP} 當局對外國人卑躬屈節]。(Zhan et al. 詹衛東等 2003)
 dàjiā _dōu _hěn _qìfèn _dāngjú _duì _wàiguórén _bēigōngqūjié
 everyone _DOU _very _angry _authority _towards _foreigner _grovel
Everyone was angry that the authorities groveled to foreigners.
 (ii) a. Mary was sad [_{CP} that her father had passed away].
 b. David was angry [_{CP} that Mary had suddenly left].

¹⁰Recall that English *make* causatives, unlike Mandarin *shǐ* causatives, allow a CP or DP subject to co-occur with the CP complement of a psych adjective, where the latter describes the content of the AP-state. Compare English 8c–d (repeated as ia–b) with Mandarin (23a–b) (repeated as iia–b).

- (i) a. [_{DP} That (event)] made John happy [_{CP} that Bill had arrived].

- b. [_{CP} That Mary was drunk] made John happy [_{CP} that Bill had arrived].
- (ii) a. *_[DP 這件事]使張三很生氣_[CP 瑪麗突然離開]。
 zhè_jiàn_shì_shǐ_zhāngsān_hěn_shēngqì_mǎlì_túrán_líkāi
 this_CL_matter_make_Zhangsan_very_angry_Mary_suddenly_leave
 Intended: *This matter made Zhangsan very angry that Mary had suddenly left.*
- b. *_[CP 李四喝醉了]使張三很生氣_[CP 瑪麗突然離開]。
 lìsì_hēzuì_le_shǐ_zhāngsān_hěn_shēngqì_mǎlì_túrán_líkāi
 Lisi_drunk ASP_make_Zhangsan_very_angry_Mary_suddenly_leave
 Intended: *That Lisi was drunk made Zhangsan very angry that Mary had suddenly left.*

While we acknowledge that our account cannot capture this difference, we do not think it is legitimate to assume that the ill-formedness of (iia) indicates that the DP subject and the CP complement originate from the complex nominal 瑪麗突然離開這件事 *mǎlì túrán líkāi zhè jiàn shì* 'the fact that Mary had suddenly left' as a reviewer claims. Empirically, the reanalysis of a CP subject into a complex nominal with the form [CP + 這件事 *zhè jiàn shì* 'the matter'] is not well supported. First, if a CP subject always has [CP + 這件事 *zhè jiàn shì* 'the matter'] as its underlying form, we expect this form to appear frequently in the corpus data, but it does not. Among all the corpus data, we could find only two examples with this form (iia–b); instead, the majority have a bare CP subject.

- (iii) a. 我看出他妹妹離開了她丈夫這回事使他很高興。(Zhan et al. 詹衛東等 2003)
 wǒ_kàn_chū_tā_mèimei_líkāi_le_tā_zhàngū_zhè_huì_shì_
 shǐ_tā_hěn_gāoxìng
 I_see_out_he_sister_leave ASP_she_
 husband_this_CL_matter_make_he_very_happy
I saw that the fact that his sister left her husband made him very happy.
- b. 但珂賽特有六十萬法郎這件事使姨媽很高興。(Zhan et al. 詹衛東等 2003)
 dàn_kēsàitè_yǒu_liùshíwàn_faláng_zhè_jiàn_shì_shǐ_yímā_hěn_gāoxìng
 but_Cosette_have_600,000_franc_this_CL_matter_make_aunt_
 very_happy
But the fact that Cosette had 600,000 francs made his aunt very happy.

Second, among the corpus data with a bare CP subject, we found examples where the CP subject clearly cannot be followed by 這件事 *zhè jiàn shì* 'the matter' as in (iv).

- (iv) 您想得到這件事使我很驚奇。(Zhan et al. 詹衛東等 2003)
 nín_xiǎngdédao_zhè_jiàn_shì_shǐ_wǒ_hěn_jīngqí
 you_think-of_this_CL_matter_make_I_very_surprised
That you could think of this matter made me very surprised.

¹¹While we have shown that backward binding of a pronoun by a quantifier is impossible in *make* causatives with non-experiencers and non-psych adjectives (see the c examples in 52–55), co-reference between the pronoun inside the CP subject and

the non-experiencer is possible, as shown in (i). Note that co-reference in (i) does not involve binding, as no *c*-command relation holds between the non-experiencer and the CP, as shown in (56b).

- (i) [_{CP} That **he**_i was driving] made **John**_i responsible.

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